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ENHANCING SEA TURTLE CONSERVATION EFFORTS THROUGH COLLABORATION APPROACH: CASE STUDY OF ORI MA FALA PROGRAM, TERNATE

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Abstract:

Internationally, turtles are listed on the IUCN red list and Appendix I of CITES (Convention on International Trade in Endangered Species), meaning their existence in nature is threatened. Ternate is well known for its endemic flora and fauna. For example, various sea turtles have lived on this small island. The promotion of knowledge about sea turtle conservation needs to be improved. As a result, commercial exploitation of sea turtles is rampant in Tobololo. This study describes the role of the local community in maintaining the existence of sea turtles and how collaboration between stakeholders can improve sea turtle conservation efforts more effectively. Sea turtle conservation at Tobololo Beach in Ternate has used a multi-stakeholder collaborative approach, which PT. Pertamina Patra Niaga DPPU Babullah broke down. The ORI MA FALA group primarily carries out conservation. The program's success in releasing hatchlings was 74.11%, and the hatching success rate was 87.4%.

Keywords: Sea Turtle, Collaborative, Corporate Social Responsibility

INTRODUCTION

Sea turtles are reptiles living in the sea, and natural and artificial threats have long threatened their existence whose existence has long been threatened both by nature and human activities. Internationally, turtles are listed on the IUCN red list and Appendix I of CITES (Convention on International Trade in Endangered Species), meaning their existence in nature is threatened. Efforts to turtle conservation are an essential and urgent program to protect and save the sea turtle population among the six sea turtle species found in Indonesia, namely the leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricata*), olive ridley sea turtle (*Lepidochelys olivacea*), loggerhead sea turtle (*Caretta caretta*), Flatback Turtle (*Narrator depressus*), and Green Turtle (*Chelonia mydas*).

Each year, the population of this species continues to decline due to natural factors and human activities that directly or indirectly endanger its population. Indirectly, therefore it is categorized as an endangered animal and protected in the Red Data Book of the International Union for Conservation of Nature and Natural Resources (IUCN), which is included in Appendix I of CITES (Convention on International Trade in Endangered Species) (Seminoff, 2002). Green turtles (*Chelonia mydas*) are long-lived organisms that can live long lives but have a slow reproductive period, so the generation rate is not comparable to the threat of extinction (Mangunjaya, 2008).

Ternate is well known for its endemic flora and fauna. On this small island, for example, various types of sea turtles have lived for a long time, and Tobololo, one of Ternate's neighborhoods, is one of the city's most important turtle nesting sites. Tobololo Beach has natural beauty with the potential of black sand beaches with the main object of potential hot springs consisting of several



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water source points (Latif et al., 2023). Marine turtles such as green turtles (*Chelonia mydas*) and hawksbill turtles (*Eretmochelys imbricata*) in Ternate as other locations have been endangered due to natural and artificial factors (Mazaris et al., 2017; Miguel et al., 2022). Predatory animals such as monitor lizards, crabs and birds often attack and eat turtle eggs and hatchlings (Stoke et al., 2024; O'Connor et al., 2017; Pheasey et al., 2018). However, the main threat to their survival is humans. At this point, turtle eggs are believed to be used as medicine to cure nervous system diseases and immune system disorders. It is not surprising that turtle eggs are then hunted, traded and consumed. Tobololo people also believe in such things. However, these wrong beliefs are not the only factors that explain the poaching of sea turtle eggs. The lack of knowledge among the community regarding the importance of sea turtle conservation is also a variable that must be considered.

Moreover, most people in the area have a low level of education. Another explanation is the need for severe efforts from various stakeholders, such as government agencies, NGOs, the private sector, and local communities, to stop the commercial exploitation of sea turtle eggs. The promotion of knowledge about sea turtle conservation needs to be improved. As a result, commercial exploitation of sea turtles is rampant in Tobololo (Jannah et al., 2022).

This issue has become a significant concern for PT Pertamina Patra Niaga DPPU Babullah. The company that supplies civil aviation fuel in the region operates near Tobololo Beach. The existence of a Community Social Responsibility program requires the company to participate in improving environmental conditions in the area closest to the operational area. For this reason, DPPU Babullah has taken the initiative to assist and pay attention to sea turtle conservation efforts in Tobololo. This study describes the role of the local community in maintaining the existence of sea turtles and how collaboration between stakeholders can improve sea turtle conservation efforts more effectively.

METHODS

This research utilized descriptive methods and explored the quantitative data for the egg hatch process. Data sources have been collected from internal documents and deep-interviewed turtle conservation members, the head of Tobololo village and some local communities. After the interviewing session, we compared or verified the data with each other to get objective results. The case discussed in this paper is the Ori Ma Fala (OMF) Turtle Conservancy, located on Tobololo Beach, which is the first turtle conservation project in Ternate and North Maluku under the community social responsibility program of PT Pertamina Patra Niaga DPPU Babullah Ternate. This program has undertaken sea turtle conservation and management projects as a partner of OMF and other stakeholders.

RESULT AND DISCUSSION

Ori Ma Fala Program. This program was carried out to protect the turtle population in Ternate. It was initiated by the Marine Fisheries Office of the North Maluku Provincial Government and two lecturers of Khairun University. OMF was a community-based turtle conservation program in Tobololo in 2015, and its formation turned out to be the first turtle conservation project in Ternate and North Maluku. The initiator was concerned that sea turtles could disappear entirely from Tobololo Beach if the local community did not take serious action to protect them. They argued that the local community needed more knowledge and awareness about protecting endangered animals and should participate in turtle conservation. This reality was the basis for the formation of OMF. The name OMF comes from the Ternate word *Ori*, which means "turtle," and *Fala*, which means



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"home." With this name, all conservation community members hope that OMF can be like a home for sea turtles.

It states that sea turtles have become endangered due to human activities and are classified as protected animals. Therefore, positive human action is needed to ensure the survival of most sea turtle species (Rupilu et al., 2019). This initiative also aligns with Government Regulation (PP) number 7 of 1999 concerning the Preservation of Plant and Animal Species. In this regulation, the Government of Indonesia has designated all sea turtle species as protected animals. Moreover, according to Law No. 5 of 1990 on the Conservation of Living Natural Resources and Their Ecosystems, perpetrators (traders and buyers) of sea turtle trade are punishable by a maximum imprisonment of five years and a maximum of IDR 100 million. The utilization of protected animals is only allowed for research and science, and the animals are saved themselves. Therefore, OMF has the leading position and role of contributing to turtle conservation at Tobololo Beach.

Interestingly, to raise awareness among the local community, a former sea turtle egg poacher was chosen as the leader of the community-based conservation. For conservation concepts, using groups or people with great experience and influence as critical informants is essential in mapping the distribution of sea turtles. At the field level, OMF often combats the beach for turtle eggs collects, hatches, and releases the hatchlings to their natural habitat. The leader of the community-based conservation, a former turtle hunter, always leads the team in carrying out all these activities.

Besides the consistent action of OMF, it has a historical struggle that, in the beginning, the community-based conservancy lacked the resources and facilities to protect the turtles and rebuild the population to a healthy level. For example, they removed turtle eggs from the beach and put them in tubs with sand in their yards. Several years after the launch of the community-based conservation project, OMF members increasingly realized the importance of partnerships with other organizations, such as businesses and non-government agencies, to scale up the conservation project. It shows that grassroots initiatives are essential to protect turtle populations and habitats. However, more was needed to get better results for conservation projects. This situation paved the way for a partnership with PT Pertamina Patra Niaga DPPU Babullah Ternate.

Role of CSR to Enhance Community-Based Conservation. As a business entity, PT Pertamina Patra Niaga DPPU Babullah Ternate has the obligation and mandatory from the Ministry of Environment and Forestry of Indonesia by the PROPER scheme to measure and monitor the industrial impact from their operational process to the biodiversity and environment quality. Since this scheme is held as competition and as a responsibility, the industry is concerned that biodiversity must be conserved to ensure environmental sustainability and human welfare. Meanwhile, PT Pertamina Patra Niaga DPPU Babullah Ternate saw that OMF lacked resources and facilities to protect sea turtles. PT Pertamina Patra Niaga DPPU Babullah Ternate then collaborated with OMF to improve sea turtle conservation and promote conservation knowledge. In 2021, PT Pertamina Patra Niaga DPPU Babullah Ternate and OMF held a shell craft training for the surrounding community to increase their knowledge of considering shells as waste. The shells can be utilized to make economically valuable crafts, such as shell garlands and other shell decorations. So far, the local community has been able to make various types of shell crafts. The collaboration of PT Pertamina Patra Niaga DPPU Babullah Ternate and OMF staff more actively provides some further training so that the local community, in general, in particular, can sell shell crafts to the market and make a living to improve their welfare of life. In conventional conservation practices, those involved in conservation often work voluntarily, do not get paid, and find it difficult to earn income because they declare it a charity. However, expecting the project to be sustainable is only possible if the members see financial benefits (Harahap et al., 2015). It is the clamshell craft training background

for OMF members and the surrounding community in Tobololo. In the long term, PT Pertamina Patra Niaga DPPU Babullah Ternate has a plan to integrate the project with the concept of ecotourism so that PT Pertamina Patra Niaga DPPU Babullah Ternate can provide economic benefits to the surrounding community in general and OMF members in particular.

From 2021 to 2022, DPPU Babullah provided funding and support for constructing and improving turtle breeding infrastructure at ORI MA FALA, such as turtle cages, hatching tanks, and the main building for education. In 2023, the company focused more on developing the skills of human resources who care for hatchlings and solving hatchling health problems to increase survival and the success of releasing hatchlings into the sea.

Collaborative role of multi-stakeholders and community ORI MA FALA. In general, PT Pertamina Patra Niaga DPPU Babullah Ternate's involvement in conservation has created a multi-stakeholder partnership between OMF, local communities, public authorities, the private sector and academia. This phenomenon is in line with recent CSR trends at the global level (Yakovleva & Alabaster, 2004). Warner (2003) explains that the complexity of social and environmental problems requires partnerships between companies, governments and civil society. With it, every actor can achieve sustainable development.

Moreover, partnerships between various actors are gaining momentum due to the failure of government, markets and civil society (van Tulder & van der Zwart, 2006). Although no single definition of a multi-stakeholder partnership exists, each actor works towards a common goal by sharing risks, resources and competencies. In the sea turtle conservation project in Tobololo, PT Pertamina Patra Niaga DPPU Babullah Ternate contributed to protecting sea turtles as one of the endangered animals, promoting conservation knowledge to the public by injecting considerable resources into OMF and increasing the company's legitimacy to other stakeholders. Local communities notify OMF and public authorities when they find turtle eggs and the sale of turtle eggs to the market. Academics, two lecturers at Khairun University, guide OMF to develop innovations and protect biodiversity. By working together, all stakeholders ensure turtles stay alive in North Maluku and Ternate in particular.

Collaboration is also carried out regarding security guards when turtles land and lay eggs, monitoring turtle nests, and guarding against theft of turtle eggs. To conduct the patrols, Babinsa-TNI assists OMF, and he is also a member of OMF. In this case, Babinsa-TNI's role is to monitor individuals or groups that collect and sell turtle eggs to the market. Local communities also contact Babinsa-TNI when they discover that individuals or groups are taking economic advantage of turtles, such as selling turtle meat and eggs to the market. Babinsa-to comes to the location shared by the local community and collects turtle meat and eggs from individuals or groups. During the turtle nesting season (August-April), OMF members also patrol Tobololo Beach by combing the beach at night. As in other conservation areas, law enforcement is carried out by various government agencies such as the North Maluku Provincial Marine and Fisheries Office, BabinsaTNI, and Ternate Police. They all form a joint task force and conduct raids on turtle eggs and turtles at least twice a year. The role of this joint task force is vital to prevent commercial exploitation of sea turtles. Interestingly, the release of baby turtles is sometimes done with special events, such as visits from politicians, students, and so on.

For further impact, PT Pertamina also responds to the latest obstacles threatening sea turtle conservation: parasite attacks and injuries to hatchlings that cause hatchling mortality to increase. PT Pertamina then invited turtle conservation practitioners from the East Java Penyu Conservation Foundation to train OMF members in making natural medicines and healthy feed for hatchlings. To raise awareness and spread the green campaign of turtle conservation of OMF at national and

international levels, PT Pertamina 2023 initiated a public social media for the OMF program. It was strengthened by training content creators for community join with the Generasi Biologi Indonesia Foundation.

Table 1. Percentage of Successful Released the Hatchlings

Egg Location	Number of Eggs Found	Number of Eggs Deposit in Hatching Place	Number of Hatchlings	Number of Hatchlings Released	Percent Released (%)
Tobololo Beach	1008	1008	881	747	74,11

Conservation successes and obstacles. The field data in Table 1, collected for one year starting in December 2022, show that the success rate of hatchling release to the sea was only 74.11%.

The percentage of hatchlings hatching, however, was relatively high at 87.4%. The main obstacles faced by the group include the high incidence of hatchling mortality, the scarcity of hatchling food, and the increase in diseases that attack hatchlings. These problems then become the main priority of the conservation program 2023 to increase the knowledge of hatchling keepers on medicines that can be used as antiseptics, antifungals, and antibiotics for hatchlings injured or attacked by parasites. Because of this, the company provides training on making hatchling feed from ingredients around the breeding site in collaboration with the East Java Penyu Conservation Foundation, as mentioned in the previous section.

CONCLUSION

Sea turtle conservation at Tobololo Beach in Ternate has used a multi-stakeholder collaborative approach, which PT Pertamina Patra Niaga DPPU Babullah broke down. The ORI MA FALA group primarily carries out conservation. The program's success in releasing hatchlings was 74.11%, and the hatching success rate was 87.4%.

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